REVELPROG IS

user manual

www.REVELTRONICS.com

Please read user manual before using the device.

Contents

1. Technical data and requirements

REVELPROG-IS made by **REVELTRONICS** is a professional tool for serial memory programming. It supports wide range of **EEPROM**, **FLASH** and **FRAM** devices with **I2C**, **SPI** and **μWire** protocols powered with **1.0V - 5.0V** voltage levels. It has integrated **ZIF** socket (for THT devices) and **SOIC** socket (for SMD devices). It has also connector for **in-circuit serial programming (ICSP)** with buffered I/O. Due to **USB 2.0** interface memory operations are really fast.

Technical data:

- power supply and communication via USB 2.0 (hardware level, bulk transfer),
- supported protocols: I2C, SPI, MICROWIRE,
- supported devices with 1.0V - 5.0V power supply,
- programming device powered from programmer (1.0 - 5.0V, I_{max} = 100mA) or from external circuit (1.0 - 5.5V),
- operation speed (read/write) up to 10Mbit/s,
- ZIF-32 + SOIC-8 (150mil) integrated sockets,
- connector for in-circuit serial programming (ICSP) with buffered I/O,
- auto adaptive I/O pins connected only for programming time (Hi-Z in IDLE state),
- short circuit and overload protection,
- device manufactured in EU, made in Poland.

Requirements:

- USB 2.0 or above,
- Windows XP, Vista, 7, 8 or 10 (32 and 64 bit) + .NET Framework 4[1] installed in OS.

---

[1] .NET 4.0 Client Profile can be downloaded from MICROSOFT: http://www.microsoft.com/en-us/download/details.aspx?id=17718

2. Features and applications

REVELPROG-IS is used in many applications such as: **car electronics & automotive** (reprogramming modules, radio-code, mileage correction, immobilizers, gps navigations), **computer service** (data recovery, reflashing/upgrading/programming BIOS chips on motherboards of PC, notebooks, copier & fax machines, printers etc.), **RTV/AGD service** (TV & TV tuners, digital cameras, multifunction devices etc.) and many other devices equipped with serial I2C/SPI/MICROWIRE EEPROM and FLASH chips. Due to the possibility of change voltage level (in range of **1.0 - 5.0V**) programmer supports both older and newer devices (e.g. latest devices equipped with 1.8V low-voltage chips). Device is equipped with **ICSP connector** that allows in-circuit serial programming without unsoldering the chip from board - **build in additional protection** (buffered I/O, short circuit and overload protection) increase reliability and safety of such operations.

<u>Main features:</u>

- reading / writing / erasing functions with user-friendly application interface,
- supported binary files (*.bin, *.rom, *.epp etc.) and Intel-Hex (*.hex) with possibility to load file to the buffer, edit it, calculate checksums, swap-bytes, compare with chip etc.),
- programming in socket or in external circuit (without unsoldering the chip),
- the target application device can be either powered by REVELPROG (possibility to change VPP and logic levels: 1.0V / 1.5V / 1.8V / 2.5V / 2.8V / 3.3V / 5.0V) or powered by an application with external power supply (1.0 – 5.5V),
- build in additional protection: buffered I/O pins internal connected only during programming + short circuit and overload protection (reduces the risk of damaging parts due to connection mistake),
- integrated sockets (ZIF + SOIC) with auto adaptive I/O pins reduces requirement of additional adapters,
- short programming time[2], e.g. WINBOND W25Q80BV (8Mb): read 0.9s (8,4Mb/s), write 3.3s (2,4Mb/s), MICRON N25Q128A (128Mb): read 12.8s (10Mb/s), write 37.6s (3,4Mb/s)

---

[2] *Due to USB 2.0 hardware layer (BULK mode) maximum real transfer is up to 10Mbit/s for read/write operations but in many cases transfer is limited by read/write time cycle from/to memory (e.g. write is always slower than read). Write time does not include chip erase time (you can find tCE in device datasheet) and verification (read) time. There is possibility to change write sequence (e.g. without erasing and verifying) but most devices require at least chip erase before write operation.*

3. Installation of software and USB drivers

Requirements:

PC application is compatible with MS Windows[3] XP, Vista, 7 , 8 and 10 (32 and 64-bit versions). You will need also .NET Framework 4.0 to run application (probably already installed[4] in your OS)

Software installation:

Software installation is typical for Windows. Just run setup (*REVELPROG-IS_v1-3_Setup)* and follow instructions (next, next, finish;). You may be prompted for USB driver installation (accept it). Shortcut to REVELPROG-IS app will be added to the desktop. Application is ready to run.

Drivers installation:

In most cases drivers will be successful installed during application installation. Drivers may be installed also later from application (menu "help" -> "install drivers").

Windows XP users will have to install drivers after first device plugged-in - just select drivers location in installation folder (by default it is *"C:\Program Files\REVELTRONICS\REVELPROG-IS\drivers\REVELPROG-IS"*). If you miss it, you can install drivers later manually (run device manager, find "REVLPROG-IS" device on the list, right click and update driver, select driver location).

Windows 8 x64 (and above) users will have to install drivers from REVELPROG-IS application by using "Zadig" installer (menu "help" -> "install drivers with Zadig"). You should select REVELPROG-IS device on the list and install WinUSB driver.

---

[3] *Windows XP with SP3 installed (service pack 3). Windows 7 with SP1 installed.*
In case of "fresh" install of OS you may need also "Microsoft Visual C++ 2010 Redistributable Package" (http://www.microsoft.com/en-us/download/details.aspx?id=5555)

[4] *if NOT, you can download and install it directly from Microsoft web page: http://www.microsoft.com/en-us/download/details.aspx?id=17718*

4. First steps with REVELPROG-IS application

4.1. User interface

Application interface is user-friendly. All main functions can be run directly from shortcut icons (all icons are actived after device connected). Please move cursor above specific icon to see additional tooltip.
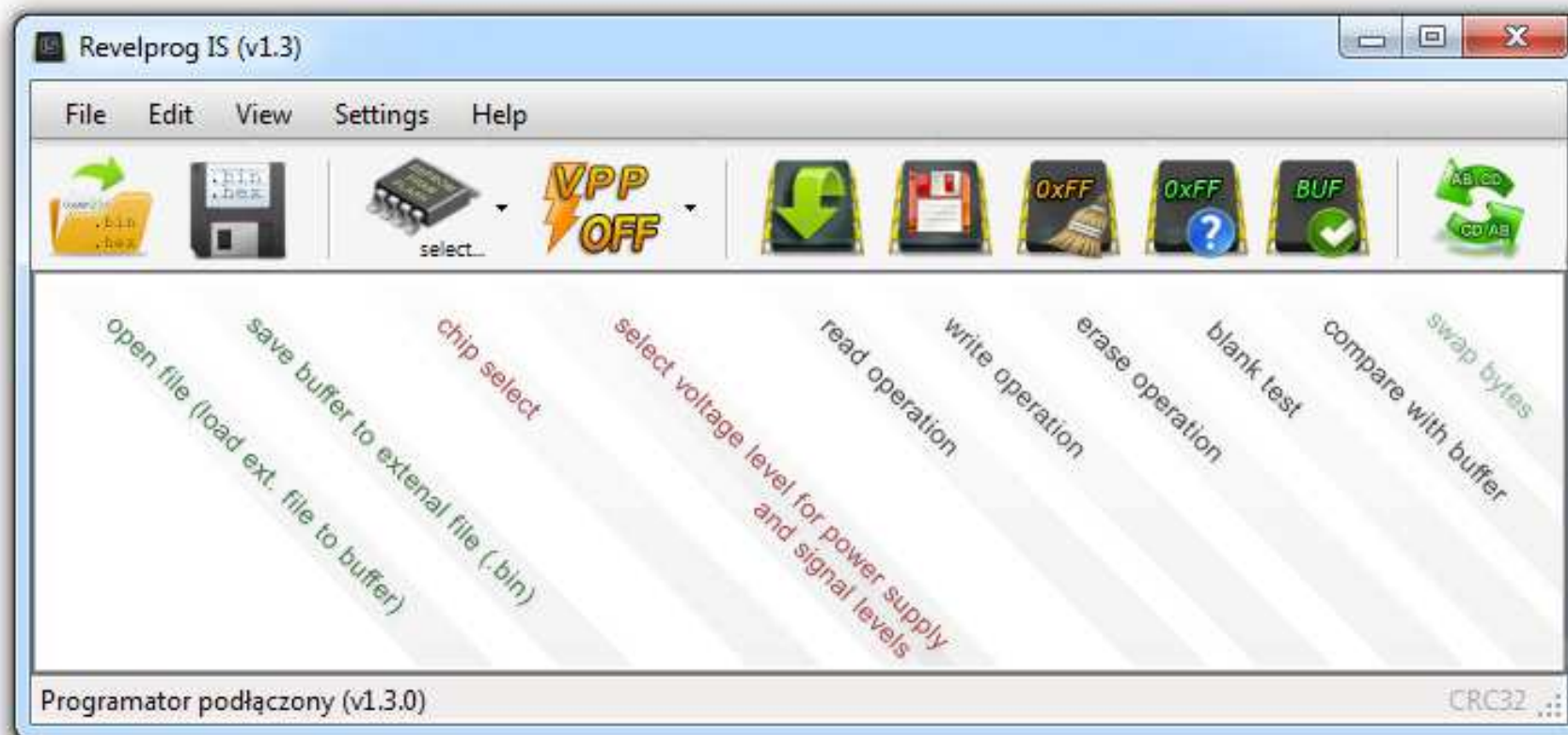
Memory buffer is displayed in hexadecimal + ASCII format. There is possibility to edit buffer as bytes and as ASCII characters.

Additional information is displayed in lower area:

- buffer information: buffer size in bytes, buffer addresses range and current address (or addresses range) of cursor position (selection) with calculated checksum-16 (from selected bytes),

- status bar (programmer version info or last operation info),

- CRC-32 checksum calculated from buffer or opened file (click on "CRC32" to recalculate checksum)

- 8 -
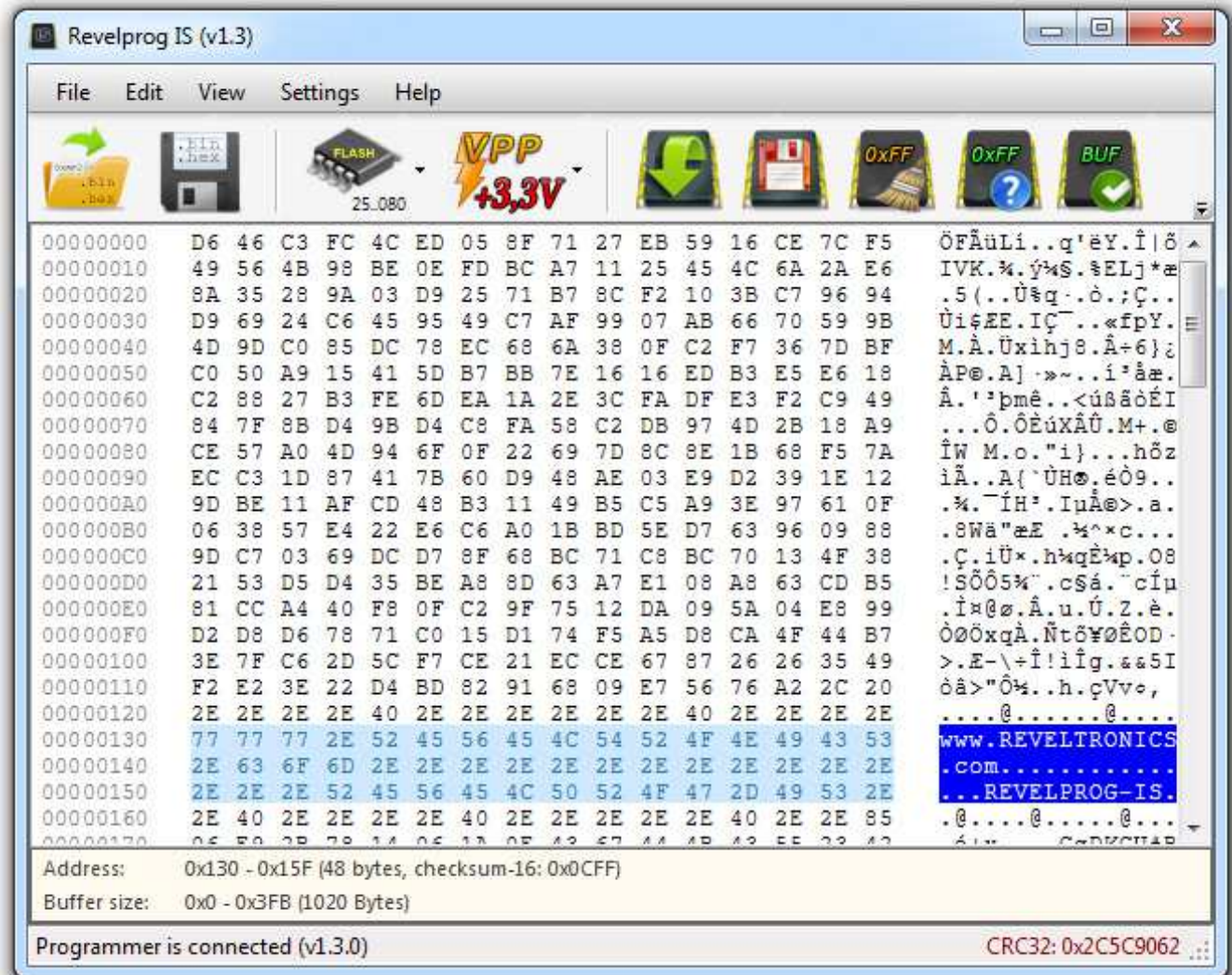
4.2. Device programming

Device type should be selected from the device database before any operation ("chip select" icon). Voltage will be set automatically. It can be changed manually by clicking VPP icon. In case of ICSP programming with external power supply, VPP should be disabled (VPP = OFF).

4.2.1. Reading

Before device reading operation, memory type should be chosen. Please check also VPP voltage (you may need to change it in case of low-voltage chips). Click READ icon (memory chip with green arrow).

Programmer will read device. Memory content will be loaded into the buffer. Buffer can be saved to external file. You can also edit the buffer and reprogram the device.

Please note at the CRC32 checksum (right corner at the bottom). If checksum is equal after each read than the risk of read with error usually does not exist. It is a good practice to make memory backup to external file before any writing.

The reading may be incorrect due to communication error or broken chip.
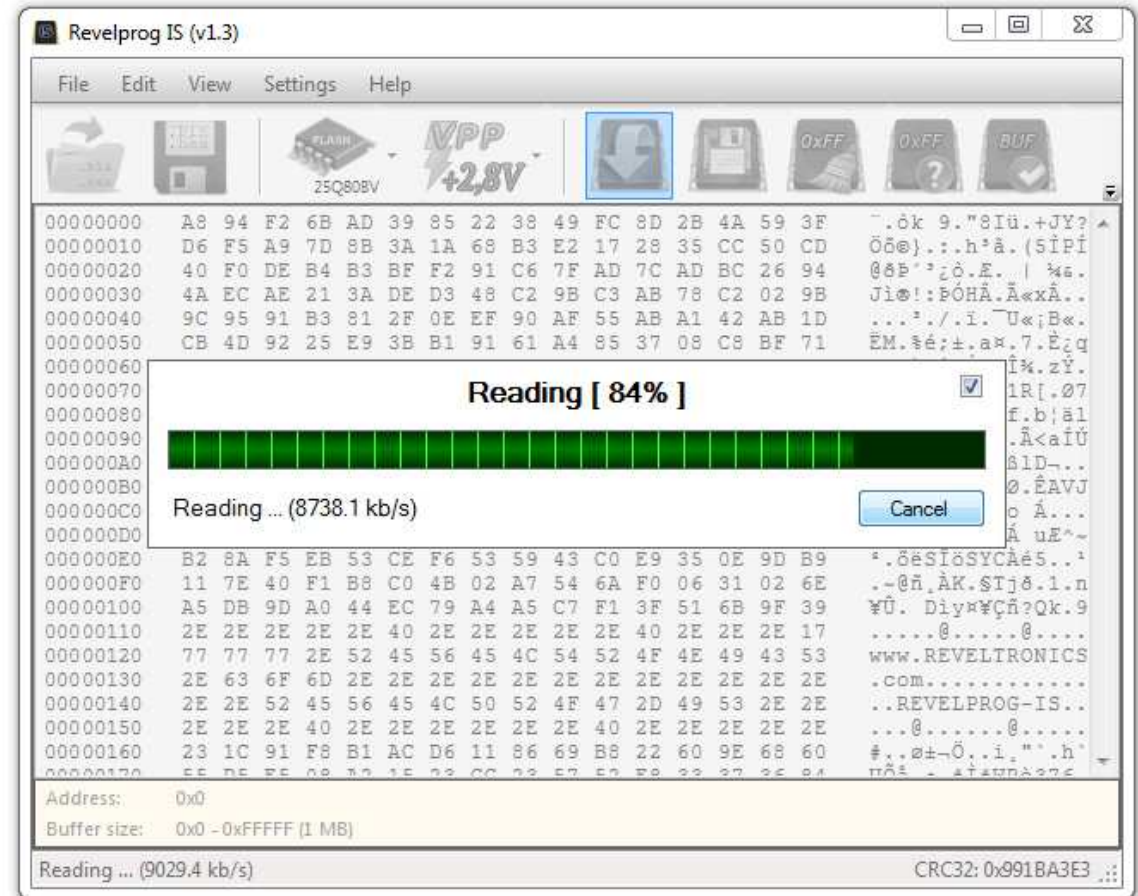
4.2.2. Writing

Before device programming operation, (1) memory type should be chosen and (2) buffer should be filled with data. You can load data from external binary (*bin, *.rom, *.epp etc.) or Intel-Hex (*.hex) file. Please check also VPP voltage – it may be changed in case of low-voltage chips. Please click "WRITE" icon (memory chip with red-orange floppy disk).

Programmer will erase the device, write data to memory from the buffer and make verification process. There is possibility to change writing sequence from menu: *Settings -> Write sequence*. Verification process will read the device after writing and compare reading with the buffer. If verification pass than memory is successful programmer. Verification error may occur due to communication error, secured or broken chip.

4.2.3. Erasing

To erase memory, empty buffer can be loaded and programmed into a memory. In most cases this operation is not necessary, because programmer supports fast erase procedures (Page Erase, Block Erase and Chip Erase). Please click "ERASE" icon (memory chip with 0xFF and broom) for erasing operation.

Please note that erasing progress is not displayed at progress bar. For high density FLASH memories erase process may took quite long (tens of seconds).
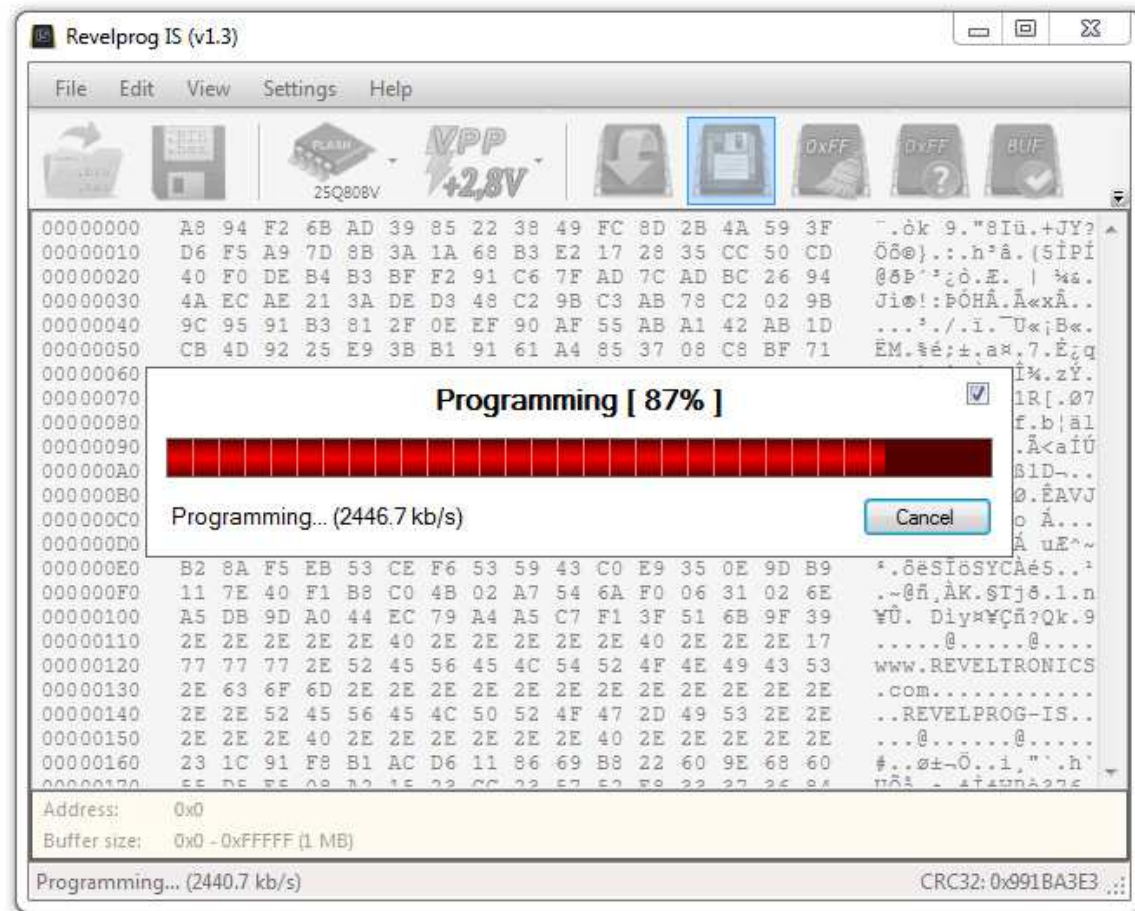
4.3. Additional features

4.3.1. Buffor edit

Buffer can be edited from application level. In the first column there is current address displayed. In the second column there is memory contents displayed (as bytes in hexadecimal mode). In the third column there is ASCII representation of memory contents. All buffer operations are allowed (e.g. CTRL+C, CTRL+V etc.). Modified buffer can be saved to external .bin or .hex file.

4.3.2. Blank test

Blank test checks if chip is empty. Test will be canceled as soon as first programmed cells will be detected (there is no need to read full memory).

4.3.3. Compare with the buffer

Operation compares buffer with the contents of memory. Operation will be cancelled as soon as first difference will be detected.

4.3.4. Swap bytes

Swap bytes operation will change byte order in 2-bytes word. For example, swapped word 0xABCD will be equal to 0xCDAB. This functionality is very useful for memories with two addressing modes, e.g. for microwire 93… series chips. REVELPROG supports both addressing modes (8-bit and 16-bit) for these devices.

4.3.5. Clear buffer or generate random buffer

There is possibility to clear buffer (0xFF) or generate random buffer from *Edit* menu. Buffer length will be equal to memory size. *CTRL + N* shortcut will clear buffer and *CTRL + N* shortcut will generate random buffer.

4.3.6. CRC32 and Checksum-16

Click "CRC32" in right-bottom corner to calculate CRC32 checksum from the buffer. Changing single byte in the buffer will change CRC32 checksum so this feature is useful in comparison of sequential reads or files. Checksum-16 is calculated in real time from selected bytes in the buffer area and it's displayed in buffer info. This is most common algorithm for checksum used in wide range of devices (checksum of mileage, operation hours, serial numbers etc.) To calculate Checksum-16 from all addresses select all bytes in the buffer area (CTRL+A).

4.3.7. VPP selection

VPP is set for both: programming voltage and signal levels. VPP can be changed with 0.1V step in range of 1.0 - 5.0 volts. This feature is very useful in few cases:

- in order to program low-voltage variant of the device (e.g. 1.8V instead of 3.3V),
- in case of in-circuit programming with external power supply -> programmer voltage should be disabled (VPP OFF),
- in case of in-circuit programming without external power supply. In many cases there is no need to set nominal voltage for external board. For example: memory operates in range of 2.6 to 3.6 volts. Nominal voltage for external board is 3.3V. Setting the lowest operational voltage (2.6V) will be enough to power and communicate with the memory and at the same time will be too low to power all circuits around. First of all, if there is main microprocessor on the board than it will not communicate with the external memory (because it will be in "reset" state due to low voltage to operate) so it will be possible to communicate with this memory using external programmer. Secondly, you will save current consumption because devices in reset state consume much less power. This trick is not always possible, so if you can't communicate with the device in external circuit try to plug-in external power supply or unsolder the chip and program it in socket. Please read Chapter 5 for more details.

4.3.8. File format conversion: .bin <-> .hex

I Application can be used also as a simple file converter (binary to intel-hex and vice versa). To convert file from one type to another, just open file (load to buffer) and save it in another format.

5. In-Circuit Serial Programming (ICSP)

<mark>**Caution!** Before ICSP programming please read following instructions!</mark>

ICSP programming is recommended only for advanced users. There is required technical knowledge and being familiar with specific chip. You should read carefully device datasheet, especially memory pinout, addressing modes and voltage levels.

Programmer is equipped with 10-pin ICSP socket (IDC10). There's only 8 pins used (pin-9 and pin-10 are not internally connected). Pinout numeration (1-8) is the same as memory pinout in datasheet for DIL8/SO8 package.

There will be various signals at these pins during chip programming (digital and analog signals). These signals are assigned automatically after memory chosen (in application) and <u>are set only during memory operation</u>.

5.1. Addressing in external circuit

All hardware addressing outputs (e.g. for EEPROM 24… series memory there are pin 1,2,3 ie A0, A1, A2) <u>must have low voltage level</u> (GND). If chip in circuit is addressed in other way (e.g. there are few the same chips, which require various addressing) then communication will fail. In this case you should address chip with the programmer. It can be done in two ways: (1) connect addressing wires to the chip and <u>in the same time disconnect them in external circuit</u>, or (2) unsolder the chip and put it to integrated programmer socket. **If you are not 100% sure about connections, DO NOT program in circuit** – unsolder the chip and program it with integrated socket.

5.2. Power supply in external circuit

The target application device can be either powered by programmer [voltage level (VPP) can be chosen from: 1.0V – 5.0V - please read Chapter 4.3.6] or powered by an application within a voltage range of 1.0V to 5.5V. If chip is already powered in external circuit, than VPP should be disabled (VPP = OFF). Absolute maximum rating at programmer's I/O pins is 5.5V - exceed this value may damage protection buffers in programmer.

5.3. Limits and possible issues during in-circuit programming

In some cases there is no possibility to program chip in application. This can be due by many reasons, such as:,

- to long signal wires,
- too much load capacity in circuit,
- incorrect pull-ups or pull-downs on signal wires,
- incorrect addressing,
- additional capacitors, diodes bus-switches etc. in circuit.

In case of power supply from programmer, current is limited to 100mA for safety reason. If application requires more power, than external power supply should be connected (and power supply from programmer should be disabled at the same time -> VPP OFF).

In case of incorrect connections, short circuit or overload, following error (pict.) will be displayed and all I/O will be disconnected. Delay of protection trigger is 5-35ms so you still have to be careful. Programmer implements "VPP-boost" mode which allows for 3x higher current consumption at the first 30ms of operation (e.g. for capacitor charging).

If you are not sure about connections or voltage levels DO NOT program in-circuit. It is much safer to unsolder the chip and program it in the socket.
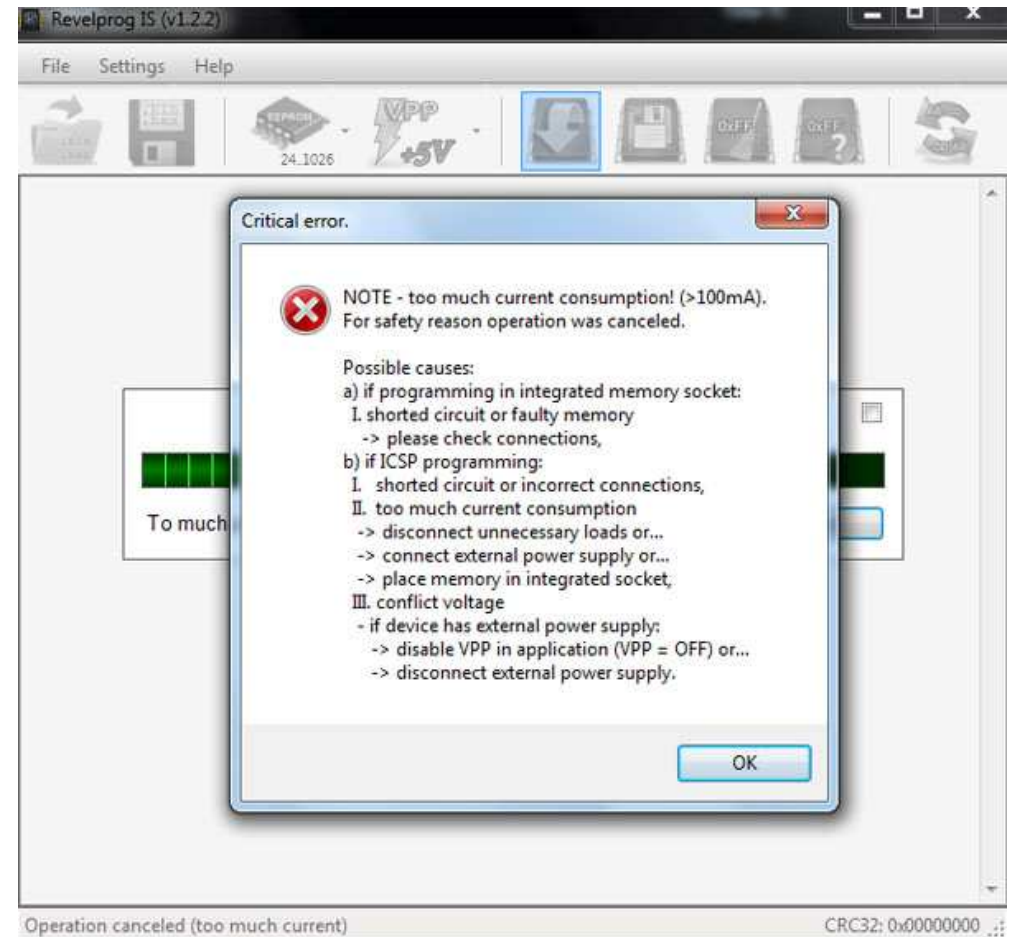
5.4. Troubleshooting for in-circuit programming

If you can program device in programmer's socket (or adapter) with success, but you cannot program it in circuit than there are few things that you can check. First of all, make sure that:

- all wires are connected properly (please take special care for pin contact in case of programming with SOIC CLIP),
- external circuit is powered properly and there is no voltage conflict on power bus,
- SPI lines: CS, (MOSI), (MISO) and (SCK) have pull-up resistors to power supply (4.7k - 10k),
- communication lines do not have additional elements, such as diodes, bus-switches, transistors etc.
- there is no communication conflict on the bus (e.g. processor and all other devices connected to shared SPI bus should be in RESET state).

Secondly, if problem still exist, you can find solution by filtering communication lines from noise and overshooting:

- impedance matching and termination for external circuit (and wires) by using e.g. termination resistors on signal wires. There is no universal value of resistance (each circuit is different) but in most cases 100 - 1000 Ohm resistors in serial for CS, (MOSI) and (SCK) will be enough:
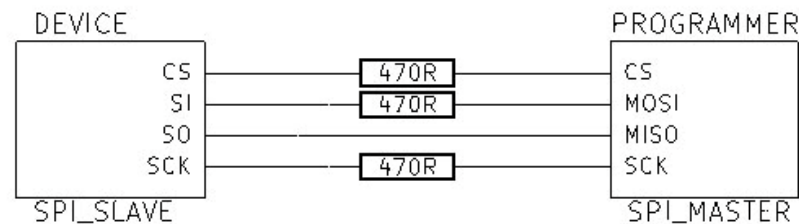
- CS line decoupling (33pF - 220pF to ground as close as possible to the device in-circuit),
- Decrease SPI clock for FLASH SPI devices (menu *Settings -> Options -> FLASH SPI*).

In some cases design of external circuit does not physically allow for in-circuit programming. In this case chip should be unsoldered and programmed in programmer's socket or adapter.

6. Updates

New trends on the market and latest devices require from users newer and newer programming devices. Customer's satisfaction is our number one priority and we share updates free of charge for all users of REVELPROG-IS. Update consist of software update (pc application) and firmware update (software inside the device). Latest software can be downloaded directly from manufacturer's webpage. You will be informed by the software about possible updates after connecting out of date device.

Caution! If a firmware update process is interrupted, your programmer may not function properly. Updates are optional – warranty does not cover damage due improper care.

During update process, device will start in DFU (Device Firmware Upgrade) mode. First time it may be necessary to install additional drivers (for DFU mode). Windows should find drivers automatically on the Internet (if not, there are also available in */drivers/DFU* subdirectory in the installation folder). Installing drivers process should take about 30 seconds. If DFU drivers are installed, application will update the firmware device. Appropriate instructions will be displayed before.

TIP: It's recommended to use Windows 7 (SP1) x64 or above for update process. In older OS some libraries may missing and update may not start. Please close all other applications during update process.

Update process may take about half a minute. Progress will be displayed on the screen. There is no possibility to cancel this process! After successful update, device will restart and will be ready to use.

Warnings - read carefully!

⚠ Attention!

1) do not disconnect power supply from computer,
2) do not disconnect the device from PC,
3) it is recommended to close all other applications.

Do NOT interrupt this process.
Interrupting this process could render your device NOT functional.

Continue?

[Tak] [Nie] [Anuluj]

7. Research and development

We are keen to still develop and improve the device. Please contact us at lab@reveltronics.com or visit our contact page at www.reveltronics.com if you have any comments or tips about REVELPROG-IS.

Very welcome are ideas:

- how to improve REVELPROG-IS - what functionality add to it,
- what chips add to supported device list in the next update (please suggest only serial I2C, SPI, uWire devices).

Repeated suggestions from many users will have more chance for implementation in the future. We encourage you to contact us because in this way we already added many devices popular only in small segments of automotive market, computer service, RTV/AGD devices etc.

8. APPENDIX A - List of supported devices

The following list details the family of supported devices (left column) with selected examples of supported memories (right column). Most chips have the same programming procedures – programmer supports more devices than the examples given in the list.

8.1. EEPROM I2C 24… series

Family	Examples
24..01 **(1kbit)**	24AA01 | 24AA014 | 24AA014H | 24AA01H | 24C01 | 24C01A | 24C01B | 24C01C | 24LC01 | 24LC014 | 24LC014H | 24LC01B | 24LC01BH | AF24BC01 | AT24C01 | AT24C01A | AT24C01B | BR24A01AF | BR24A01AFJ | BR24C01 | BR24C01A | BR24C01AF | BR24C01AFJ | BR24C01AFV | BR24C21F | BR24C21FJ | BR24C21FV | BR24G01 | BR24G01F | BR24G01FJ | BR24G01FV | BR24G01FVT | BR24L01 | BR24L01A | BR24L01AF | BR24L01AFJ | BR24L01AFV | BR24L01AFVM | BR24L01AFVT | BR24T01A | CAT24AA01 | CAT24C01 | CAT24C01B | CAT24C21 | CAT24FC01 | CAT24LC01 | CAT24WC01 | CR24C01 | CY24C01 | FM24C01 | FT24C01 | FT24C01A | GE24C01 | GP24BC01 | HM24LC01 | HT24C01 | HT24LC01 | IS24C01 | IS24C01B | LT24C01 | LX24C01 | M24C01 | MM24C01 | S-24C01A | S-24C01B | S-24C01C | S-24CS01A | SLA24C01 | SLE24C01 | ST24C01 | ST24W01 | TMC24A01 | TU24C01B | UG24C01 | X24012 | X24C01 | X24C01A | XL24C01A
24..02 **(2kbit)**	24AA02 | 24AA024 | 24AA024H | 24AA025 | 24AA02H | 24C02 | 24C02A | 24C02B | 24C02C | 24LC02 | 24LC024 | 24LC024H | 24LC025 | 24LC02B | 24LC02BH | 24LC02W | 24LLC02 | A24C02 | ACE24C02 | ACE24LC02 | AF24BC02 | AM24LC02 | AT24C02 | AT24C02A | AT24C02B | AT24C02C | AT24HC02B | AT24HC04B | AX24C02A | BJX25LC02 | BL24C02 | BR24A02F | BR24A02FJ | BR24A02FVM | BR24C02 | BR24C02F | BR24C02FV | BR24G02F | BR24G02FJ | BR24G02FVT | BR24L02 | BR24L02F | BR24L02FJ | BR24L02FV | BR24L02FVM | BR24L02FVT | BR24T02 | CAT24AA02 | CAT24C02 | CAT24C03 | CAT24LC02 | CAT24LC02A | CAT24LC02AZ | CAT24LC02Z | CAT24WC02 | CAT24WC03 | CKD24A02 | CR24C02 | CW24C02 | CW24C02B | CY24C02 | EC24C02 | EC24C02A | EM24LC02 | FM24C02 | FM24C02U | FM24C02UF | FM24C03U | FM24C03UF | FT24C02 | FT24C02A | GE24C02 | GM24LC02B | GP24BC02 | HM24LC02 | HN58X2402 | HT24C02 | HT24LC02 | IN24AA02A | IN24AA02B | IN24LC02B | IS24C02 | IS24C02A | IS24C02B | IS24C02E | K24C02 | KK24LC02B | L24C02 | L24W02 | LE24C0221 | LE24C023 | LE24L0221 | LT24C02 | LX24C02 | LY24C02 | M24C02 | MAX24A02 | MC24C02 | MC24LC02 | MM24C02 | NM24C02 | NM24C02F | NM24C02U | NM24C03 | NM24C03F | NM24W02 | NSC24C02 | PTK24A02T | RT24A02 | S-24C02A | S-24C02B | S-24C02C | S-24CS02A | SLA24C02 | SLE24C02 | SM24C02 | ST24C02 | ST24W02 | T24C02 | T24C02A | TMC24A02 | TU24C02B | UG24C02 | WS24C02 | X24022 | X24C02 | XL24C02 | Y24LC02
24..04 **(4kbit)**	24AA04 | 24AA04H | 24C04 | 24C04A | 24LC04 | 24LC04B | 24LC04BH | A24C04 | ACE24C04 | ACE24LC02 | AF24BC04 | AM24LC04 | AT24C04 | AT24C04A | AT24C04B | AX24C04A | BJX24LC04 | BL24C04 | BR24A04F | BR24A04FJ | BR24C04 | BR24C04F | BR24C04FJ | BR24C04FV | BR24G04F | BR24G04FJ | BR24G04FV | BR24G04FVT | BR24L04 | BR24L04F | BR24L04FJ | BR24L04FV | BR24L04FVM | BR24L04FVT | BR24T04 | CAT24C04 | CAT24C05 | CAT24LC04 | CAT24WC04 | CAT24WC05 | CR24C04 | CW24C04 | CW24C04A | CY24C04 | EC24C04 | EC24C04A | FM24C04 | FM24C04U | FM24C04UF | FM24C05U | FM24C05UF | FM24CL04 | FT24C04 | FT24C04A | GE24C04 | GM24LC04B | HM24LC04 | HN58X2404 | HT24C04 | HT24LC04 | IN24LC04B | IS24C04 | IS24C04A | IS24C04B | K24C04 | KK24LC04 | KK24LC04B | L24C04 | L24W04 | LE24C042 | LE24C043 | LT24C04 | LX24C04 | LY24C04 | M24C04 | M24LC04 | MM24C04 | NM24C04 | NM24C04F | NM24C04U | NM24C05 | NM24C05F | NM24W04 | S-24C04A | S-24C04B | S-24CS04A | SLA24C04 | SLE24C04 | ST24C04 | ST24W04 | T24C04 | T24C04A | TMC24A04 | TU24C04B | UG24C04 | WS24W04 | X24042 | X24C04 | XL24C04 | Y24LC04
24..08 **(8kbit)**	24AA08 | 24AA08H | 24C08 | 24C08B | 24LC08 | 24LC08B | 24LC08BH | 24LLC08 | A24C08 | ACE24C08 | ACE24C08A | ACE24LC08 | ACE24LC08A | AF24BC08 | AM24LC08 | AT24C08 | AT24C08A | AT24C08B | AT24RF08C | AX24C08A | BL24C08 | BR24A08F | BR24A08FJ | BR24C08 | BR24C08F | BR24C08FJ | BR24C08FV |

	BR24G08F | BR24G08FJ | BR24G08FV | BR24G08FVT | BR24L08 | BR24L08F | BR24L08FJ | BR24L08FV | BR24L08FVM | BR24L08FVT | BR24T08 | CAT24C08 | CAT24LC08 | CAT24WC08 | CR24C08 | CW24C08 | CW24C08B | CY24C08 | EC24C08 | EC24C08A | FM24C08 | FM24C08U | FM24C08UF | FM24C09UF | FM24CL08 | FT24C08 | FT24C08A | GM24LC08B | GP24BC08 | HN58X2408 | HT24C08 | HT24LC08 | IN24AA08B | IN24LC08B | IS24C08 | IS24C08A | K24C08 | KK24LC08 | KK24LC08B | L24M08 | L24W08 | LE24C081 | LE24C082 | LE24L082 | LT24C08 | LX24C08 | LY24C08 | M24C08 | MAX24A08 | MC24C08 | MC24LC08 | MM24C08 | MTV24C08 | MTV24LC08 | NM24C08 | NM24C08F | NM24C08U | NM24C09 | NM24C09F | NM24C09U | NM24W08 | NSC24C08 | PTK24A08T | S-24C08A | S-24C08C | S-24CS08A | SLA24C08 | SLE24C08 | ST24C08 | ST24W08 | T24C08 | T24C08A | TMC24A08 | TU24C08B | UG24C08 | WS24W08 | X24C08 | XL24C08 | Y24LC08
24..16 **(16kbit)**	24AA16 | 24AA16H | 24C16 | 24C16B | 24LC16 | 24LC164 | 24LC16B | 24LC16BH | 24LLC16 | A24C16 | ACE24C16 | ACE24LC16 | AF24BC16 | AM24LC16 | AT24C16 | AT24C164 | AT24C16A | AT24C16B | AT24C16C | AX24C16A | BJX24LC16 | BL24C16 | BR24A16F | BR24A16FJ | BR24C16 | BR24C16F | BR24C16FJ | BR24C16FV | BR24E16 | BR24E16F | BR24E16FJ | BR24E16FV | BR24G16F | BR24G16FJ | BR24G16FV | BR24G16FVT | BR24L16 | BR24L16F | BR24L16FJ | BR24L16FV | BR24L16FVT | BR24S16F | BR24S16FJ | BR24S16FV | BR24S16FVM | BR24S16FVT | BR24T16 | CAT24C16 | CAT24C16L | CAT24C16Z | CAT24FC16 | CAT24FC17 | CAT24WC16 | CAT24WC17 | CR24C16 | CW24C16 | CW24C16A | CY24C16 | EC24C16 | EC24C16A | FM24C16 | FM24C16U | FM24C16UF | FM24C17 | FM24C17U | FM24C17UF | FM24CL16 | FT24C16 | FT24C16A | GM24LC16B | GP24BC16 | HM24LC16 | HN58X2416 | HT24C16 | HT24LC16 | IN24LC16B | IS24C16 | IS24C16A | KK24LC16 | KK24LC16B | L24W16 | LE24C162 | LE24L162 | LT24C16 | LX24C16 | LY24C16 | M24C16 | MAX24A16 | MC24C16 | MC24LC16 | MM24C16 | MTV24C16 | MTV24LC16 | NM24C16 | NM24C16F | NM24C16U | NM24C17 | NM24C17F | NM24C17U | NM24W16 | NSC24C16 | PTK24A16T | S-24C16A | S-24CS16A | SLA24C16 | SLE24C16 | SLE24C164 | ST24C16 | ST24W16 | T24C16 | T24C16A | TMC24A16 | TU24C16B | UG24C16 | WS24W16 | X24164 | X24165 | X24C16 | XL24C16 | XL24C164 | Y24LC16
24..32 **(32kbit)**	24AA32 | 24AA32A | 24C32 | 24LC32 | 24LC32A | 24LC32B | A24C32 | ACE24C32 | ACE24C32A | AF24BC32 | AT24C32 | AT24C32A | AT24C32B | AT24C32C | AT24C32D | AX24C32A | BR24A32F | BR24A32FJ | BR24C32 | BR24C32F | BR24G32F | BR24G32FJ | BR24G32FV | BR24G32FVT | BR24L32 | BR24L32F | BR24L32FJ | BR24L32FV | BR24L32FVT | BR24S32F | BR24S32FJ | BR24S32FV | BR24S32FVM | BR24S32FVT | BR24T32 | CAT24C32 | CAT24FC32 | CAT24FC32A | CAT24WC32 | CAT24WC33 | CR24C32 | CW24C32 | EC24C32 | EC24C32A | FM24C32 | FM24C32U | FM24C32UF | FT24C32 | FT24C32A | HM24LC32 | HN58X2432 | HT24C32 | HT24LC32 | IN24AA32A | IS24C32 | IS24C32A | IS24C32B | IS24C32C | K24C32 | L24W32 | LE24C322 | LE24L322 | M24C32 | MC24C32 | MM24C32 | NM24C32 | NM24C32U | NM24C32UF | NSC24C32 | PTK24A32T | S-24C32C | SLA24C32 | SLE24C32 | ST24C32 | T24C32 | T24C32A | TU24C32 | WS24W32 | X24320
24..64 **(64kbit)**	24AA64 | 24AA64F | 24AA65 | 24C64 | 24C65 | 24FC64 | 24LC64 | 24LC64B | 24LC64F | 24LC65 | A24C64 | ACE24C64 | ACE24C64A | AF24BC64 | AT24C64 | AT24C64A | AT24C64B | AT24C64C | AT24C64D | AX24C64A | BR24A64F | BR24A64FJ | BR24C64 | BR24C64F | BR24G64F | BR24G64FJ | BR24G64FV | BR24G64FVT | BR24L64 | BR24L64F | BR24L64FJ | BR24S64F | BR24S64FJ | BR24S64FV | BR24S64FVM | BR24S64FVT | BR24T64 | CAT24C64 | CAT24FC64 | CAT24FC65 | CAT24FC66 | CAT24WC64 | CAT24WC65 | CR24C64 | CW24C64 | EC24C64 | EC24C64A | FM24C64 | FM24C64F | FM24CL64 | FT24C64 | FT24C64A | HM24LC64 | HN58X2464 | HT24C64 | HT24LC64 | IS24C64 | IS24C64A | IS24C64B | K24C64 | L24W64 | LE24CB642 | M24C64 | MM24C64 | NM24C65 | NM24C65F | NSC24C64 | PTK24A64T | S-24C64C | SLA24C64 | SLE24C64 | ST24C64 | T24C64 | T24C64A | TU24C64B | WS24W64 | X24640 | X24641 | X24645
24..128 **(128kbit)**	24AA128 | 24C128 | 24FC128 | 24LC128 | 24LC21 | 24LC21A | 24LCS21A | ACE24C128 | AF24BC128 | AT24C128 | AT24C128B | AT24C128C | AT24CS128 | AX24C128A | BL24C128 | BR24G128F | BR24G128FJ | BR24G128FV | BR24G128FVT | BR24S128F | BR24S128FJ | BR24S128FV | BR24S128FVT | BR24T128 | CAT24C128 | CAT24WC128 | CAT24WC129 | CR24C128 | CW24C128 | EC24C128 | EC24C128A | FM24C128 | FM24C128F | FM24CL128 | FT24C128 | FT24C128A | HN58X24128 | HT24C128 | HT24LC128 | IS24C128 | IS24C128A | IS24C128B | IS24L128 | LE24CB1283 | M24128 | S-24C128C | T24C128 | T24C128A | TU24C128
24..256 **(256kbit)**	24AA256 | 24C256 | 24FC256 | 24LC256 | A24C256 | ACE24C256 | AT24C256 | AT24C256B | AT24C256C | AT24CS256 | AX24C256A | BL24C256 | BR24S256F | BR24S256FJ | BR24T256 | CAT24C256 | CAT24FC256 | CAT24WC256 | CAT24WC257 | CW24C256 | EC24C256A | FM24C256 | FM24C256F | FM24CL256 | FT24C256 |

	FT24C256A | HN58X24256 | HT24C256 | HT24LC256 | IS24C256 | IS24C256A | IS24L256 | M24256 | MC24C256 | T24C256 | T24C256A | TU24C256
24..512 **(512kbit)**	24AA512 | 24C512 | 24FC512 | 24LC512 | AT24C512 | AT24C512B | AT24C512C | CAT24C512 | CAT24WC512 | FM24C512 | FM24CL512 | FT24C512A | HN58X24512 | HT24C512 | HT24LC512 | IS24C512 | M24512 | SA24C512
24..1024 **(1Mbit)**	24AA1024 | 24C1024 | 24FC1024 | 24LC1024 | AT24C1024 | AT24C1024B | CAT24C1024 | CAT24WC1024 | FM24C1024 | FM24CL1024 | HT24C1024 | HT24LC1024 | IS24C1024
24..1025 **(1Mbit)**	24AA1025 | 24C1025 | 24LC1025
24..1026 **(1Mbit)**	24AA1026 | 24C1026 | 24LC1026
Other	Philips: PCF8582C-2

8.2. EEPROM SPI 25… series

25..010 **(1kbit)**	25010 | 25AA010 | 25AA010A | 25C010 | 25LC010 | 25LC010A | A25010A | AT25010 | BR25H010-W | BR25L010-W | CAT25C01 | CAT25C11 | CY25C01 | IS25C01 | S-25A010A | ST25C01 | ST25W01 | XC25010
25..020 **(2kbit)**	25020 | 25AA020 | 25AA020A | 25C020 | 25LC020 | 25LC020A | AT25020 | AT25020A | BR25H020-W | BR25L020-W | CAT25C02 | CAT25C03 | CY25C02 | FM25C020U | FM25C020UL | IS25C02 | NM25C020 | S-25A020A | ST25C02 | ST25W02 | X25020 | XC25020
25..040 **(4kbit)**	25040 | 25AA040 | 25AA040A | 25C040 | 25C040A | 25LC040 | 25LC040A | AT25040 | AT25040ACAT25C04 | BR25H040-W | BR25L040-W | CAT25C05 | CY25C04 | FM25C040U | FM25C040UL | FM25C041U | FM25L04 | IN25AA040 | IS25C04 | NM24C040 | NM24C041 | S-25A040A | ST25C04 | ST25W04 | X25040 | X25041 | XC25040
25..080 **(8kbit)**	25080 | 25AA080 | 25AA080A | 25AA080B | 25C080 | 25LC080 | 25LC080A | 25LC080B | AT25080 | AT25080A | AT25080B | BR25H080-W | BR25L080-W | CAT25C08 | CAT25C09 | CY25C08 | FM25L08 | IN25AA080 | IS25C08 | S-25A080A | ST25C08 | ST25W08 | X25080 | X25F008 | XC25080
25..160 **(16kbit)**	25160 | 25AA160 | 25AA160A | 25AA160B | 25C160 | 25LC160 | 25LC160A | 25LC160B | AT25160 | AT25160A | AT25160B | BR25H160-W | BR25L160-W | CAT25C16 | CAT25C17 | CY25C16 | FM25C160 | FM25C160U | FM25C160UL | FM25L016 | IN25AA160 | IS25C16 | NM24C160 | S-25A160A | ST25C16 | ST25W16 | X25160 | X25170 | X25F016 | XC25160
25..320 **(32kbit)**	25320 | 25AA320 | 25AA320A | 25C320 | 25LC320 | 25LC320A | AT25320 | AT25320A | AT25320B | BR25H320-W | BR25L320-W | CAT25C32 | CAT25C33 | FM25C320U | FM25C320UL | IS25C32 | IS25C32A | IS25C32B | S-25A320A | TI2532 | X25320 | X25F032 | XC25320
25..640 **(64kbit)**	25640 | 25AA640 | 25C640 | 25LC640 | AT25640 | AT25640A | AT25640B | BR25L640-W | CAT25C64 | CAT25C65 | FM25C640U | FM25CL64 | FM25L64 | IS25C64 | IS25C64A | IS25C64B | NM24C640 | S-25A640A | TI2564 | X25640 | X25642 | X25650 | X25F064 | XC25640
25..128 **(128kbit)**	25128 | 25AA128 | 25C128 | 25LC128 | AT25128 | AT25128A | CAT25C128 | IS25C128 | IS25C128A | S-25C128A | X25128 | X25138 | X25F128 | XC25128
25..256 **(256kbit)**	25256 | 25AA256 | 25C256 | 25LC256 | AT25256 | AT25256A | CAT25C256 | FM25L256 | IS25C256 | IS25C256A | X25256 | XC25256

25..512 (512kbit)	25512 | 25AA512 | 25C512 | 25LC512 | AT25512 | XC25512
25..1024 (1Mbit)	251024 | 25AA1024 | 25C1024 | 25LC1024 | AT251024 | XC251024

8.3. EEPROM SPI 35… series

35..080 (8kbit)	D80D0WQ | M35080 | M35080-3 | M35080-6 | M35080V6 | M35080-VP (write incremental register with higher value, erase and write remaining buffer)

8.4. EEPROM SPI 95… series

95..010, 95..020 95..040, 95..080 95..160, 95..320 95..640, 95..128 95..256, 95..512 95..10, 95..20 (1kbit – 2Mbit)	M95010, M95020, M95040, M95080, M95160, M95320, M95640, M95128, M95256, M95512, M95M01, M95M02
95P08 (8kbit)	5P08 | 5P08C3 | 95P08

8.5. EEPROM MICROWIRE 93... series

Supported both addressing (8-bit and 16-bit) modes.

93..06 (256bit)	9306 | 93C06 | KM93C06 | KM93C06GD | M93C06 | NMC9306 | NMC93C06L | NMC93C06LZ
93..46 **(1kbit)**	93AA46 | 93AA46A | 93AA46B | 93AA46C | 93C46 | 93C46A | 93C46B | 93C46C | 93CX46 | 93LC46 | 93LC46A | 93LC46B | 93LC46C | 93X46 | A93C46(x16) | A93C46(x8) | AF93BC46(x16) | AF93BC46(x8) | AK93C46 | AM93LC46 | AT93C46(x16) | AT93C46(x8) | AT93C46A | AT93C46B | AT93C46C | AT93C46D(x16) | AT93C46D(x8) | AT93C46E | BL93C46(x16) | BL93C46(x8) | BR93A46 | BR93C46 | BR93L46 | BR93LC46 | CAT93C46(x16) | CAT93C46(x8) | CAT93C46A | CAT93C46AH | CAT93C46B(x16) | CAT93C46B(x8) | CAT93C46H(x16) | CAT93C46H(x8) | CAT93C46R(x8) | CAT93HC46(x16) | CAT93HC46(x8) | CR93C46(x16) | CR93C46(x8) | EC93C46A(x16) | EC93C46A(x8) | EM93LC46(x16) | EM93LC46(x8) | FM93C46 | FM93C46A(x16) | FM93C46A(x8) | FT93C46(x16) | FT93C46(x8) | FT93C46A(x16) | FT93C46A(x8) | GSC93BC46A(x16) | GSC93BC46A(x8) | GT93C46(x16) | GT93C46(x8) | GT93C46A(x16) | GT93C46A(x8) | HT93LC46-A(x16) | HT93LC46-A(x8) | IN93AA46A | IN93AA46B | IN93AA46C(x16) | IN93AA46C(x8) | IN93LC46A | IN93LC46B | IN93LC46C(x16) | IN93LC46C(x8) | IS93C46-3 | IS93C46A(x16) | IS93C46A(x8) | IS93C46AGR(x16) | IS93C46AGR(x8) | IS93C46B | IS93C46BGR | IS93C46D(x16) | IS93C46D(x8) | IS93C46DGR(x16) | IS93C46DGR(x8) | K93C46 | KM93C46 | KM93C46GD | KM93C46V | KM93C46VGD | M93C46(x16) | M93C46(x8) | MAX93LC46 | MC93C46 | MM93C46-3 | MM93C46-3GR | NM93C46 | NM93C46A | NM93C46A(x16) | NM93C46A(x8) | NM93C46L | NM93C46LZ | PTK93LC46(x16) | PTK93LC46(x8) | RT93LC46(x16) | RT93LC46(x8) | S93462 | S93463 | S-93A46A | S-93A46B | S-93L46AD | S93VP462 | S93VP463 | S93WD462 | S93WD463 | T93C46(x16) | T93C46(x8) | T93C46A(x16) | T93C46A(x8) | TMC93LC46 | TMC93LC46(x16) | TMC93LC46(x8) | TU93C46(x16) | TU93C46(x8) | UG93C46-A(x16) | UG93C46-A(x8) | W93C46 | W93C46B(x16) | W93C46B(x8) | XL93C46 | XL93LC46 | XL93LC46A | XL93LC46ARY | XL93LC46B(x16) | XL93LC46B(x8) | XL93LC46BRY(x16) | XL93LC46BRY(x8) | XL93LC46RY | Y93LC46(x16)
93..56 **(2kbit)**	93AA56 | 93AA56A | 93AA56B | 93AA56C | 93C56 | 93C56A | 93C56B | 93C56C | 93CX56 | 93LC56 | 93LC56A | 93LC56B | 93LC56C | 93X56 | A93C56(x16) | A93C56(x8) | AF93BC56(x16) | AF93BC56(x8) | AK93C56 | AM93LC56 | AT93C56(x16) | AT93C56(x8) | AT93C56A | AT93C56B | AT93C56C | AT93C56D(x16) | AT93C56D(x8) | AT93C56E | AT93C57(x16) | AT93C57(x8) | BL93C56(x16) | BL93C56(x8) | BR93A56 | BR93C56 | BR93L56 | BR93LC56 | CAT93C56(x16) | CAT93C56(x8) | CAT93C56A | CAT93C56AH | CAT93C56B(x16) | CAT93C56B(x8) | CAT93C56H(x16) | CAT93C56H(x8) | CAT93C56R(x8) | CAT93C57(x16) | CAT93C57(x8) | CAT93HC56(x16) | CAT93HC56(x8) | CR93C56(x16) | CR93C56(x8) | EC93C56A(x16) | EC93C56A(x8) | EM93LC56(x16) | EM93LC56(x8) | EM93LC57(x16) | EM93LC57(x8) | FM93C56 | FM93C56A(x16) | FM93C56A(x8) | FT93C56(x16) | FT93C56(x8) | FT93C56A(x16) | FT93C56A(x8) | GSC93BC56A(x16) | GSC93BC56A(x8) | GT93C56(x16) | GT93C56(x8) | GT93C56A(x16) | GT93C56A(x8) | HT93LC56-A(x16) | HT93LC56-A(x8) | IN93AA56A | IN93AA56B | IN93AA56C(x16) | IN93AA56C(x8) | IN93LC56A | IN93LC56B | IN93LC56C(x16) | IN93LC56C(x8) | IS93C56-3 | IS93C56A(x16) | IS93C56A(x8) | IS93C56AGR(x16) | IS93C56AGR(x8) | IS93C56B | IS93C56BGR | IS93C56D(x16) | IS93C56D(x8) | IS93C56DGR(x16) | IS93C56DGR(x8) | K93C56 | KM93C56 | KM93C56GD | KM93C56V | KM93C56VGD | KM93C57(x16) | KM93C57GD(x16) | KM93C57V(x16) | M93C56(x16) | M93C56(x8) | MC93C56 | MM93C56-3 | MM93C56-3GR | NM93C56 | NM93C56A | NM93C56A(x16) | NM93C56A(x8) | NM93C56L | NM93C56LZ | PTK93LC56(x16) | PTK93LC56(x8) | S-93A56A | S-93A56B | S-93L56AD | T93C56(x16) | T93C56(x8) | T93C56A(x16) | T93C56A(x8) | TMC93LC56 | TMC93LC56(x16) | TMC93LC56(x8) | TMC93LC57(x16) | TMC93LC57(x8) | TU93C56(x16) | TU93C56(x8) | UG93C56-A(x16) | UG93C56-A(x8) | UG93C56-C | W93C56 | W93C56B(x16) | W93C56B(x8) | XL93C56 | XL93LC56 | XL93LC56A | XL93LC56ARY | XL93LC56B(x16) | XL93LC56B(x8) | XL93LC56BRY(x16) | XL93LC56BRY(x8) | XL93LC56RY | Y93LC56-A(x16)

93..66 **(4kbit)**	93AA66 | 93AA66A | 93AA66B | 93AA66C | 93C66 | 93C66A | 93C66B | 93C66C | 93CX66 | 93LC66 | 93LC66A | 93LC66B | 93LC66C | 93X66 | A93C66(x16) | A93C66(x8) | AF93BC66(x16) | AF93BC66(x8) | AK93C66 | AM93LC66 | AT93C66(x16) | AT93C66(x8) | AT93C66A | AT93C66B | AT93C66C | AT93C66D(x16) | AT93C66D(x8) | AT93C66E | BL93C66(x16) | BL93C66(x8) | BR93A66 | BR93C66 | BR93L66 | BR93LC66 | CAT93C66(x16) | CAT93C66(x8) | CAT93C66A | CAT93C66AH | CAT93C66B(x16) | CAT93C66B(x8) | CAT93C66H(x16) | CAT93C66H(x8) | CAT93C66R(x8) | CAT93HC66(x16) | CAT93HC66(x8) | CR93C66(x16) | CR93C66(x8) | EC93C66A(x16) | EC93C66A(x8) | EM93LC66(x16) | EM93LC66(x8) | FM93C66 | FM93C66A(x16) | FM93C66A(x8) | FT93C66(x16) | FT93C66(x8) | FT93C66A(x16) | FT93C66A(x8) | GSC93BC66A(x16) | GSC93BC66A(x8) | GT93C66(x16) | GT93C66(x8) | GT93C66A(x16) | GT93C66A(x8) | HT93LC66-A(x16) | HT93LC66-A(x8) | IN93AA66A | IN93AA66B | IN93AA66C(x16) | IN93AA66C(x8) | IN93LC66A | IN93LC66B | IN93LC66C(x16) | IN93LC66C(x8) | IS93C66-3 | IS93C66A(x16) | IS93C66A(x8) | IS93C66AGR(x16) | IS93C66AGR(x8) | IS93C66B | IS93C66BGR | IS93C66D(x16) | IS93C66D(x8) | IS93C66DGR(x16) | IS93C66DGR(x8) | K93C66 | KM93C66 | KM93C66GD | KM93C66V | KM93C66VGD | KM93C67(x16) | KM93C67GD(x16) | KM93C67V(x16) | M93C66(x16) | M93C66(x8) | MC93C66 | MM93C66-3 | MM93C66-3GR | NM93C66 | NM93C66A | NM93C66A(x16) | NM93C66A(x8) | NM93C66L | NM93C66LZ | PTK93LC66(x16) | PTK93LC66(x8) | S93662 | S93663 | S-93A66A | S-93A66B | S-93L66AD | S93VP662 | S93VP663 | S93WD662 | S93WD663 | T93C66(x16) | T93C66(x8) | T93C66A(x16) | T93C66A(x8) | TMC93LC66 | TMC93LC66(x16) | TMC93LC66(x8) | TU93C66(x16) | TU93C66(x8) | UG93C66-A(x16) | UG93C66-A(x8) | W93C66 | W93C66B(x16) | W93C66B(x8) | XL93C66 | XL93LC66 | XL93LC66A | XL93LC66ARY | XL93LC66B(x16) | XL93LC66B(x8) | XL93LC66BRY(x16) | XL93LC66BRY(x8) | XL93LC66RY | Y93LC66-A(x16)
93..76 **(8kbit)**	93AA76 | 93AA76A | 93AA76B | 93AA76C | 93C76 | 93C76A | 93C76B | 93C76C | 93CX76 | 93LC76 | 93LC76A | 93LC76B | 93LC76C | 93X76 | A93C76(x16) | A93C76(x8) | AF93BC76(x16) | AF93BC76(x8) | AK93C76 | AM93LC76 | AT93C76(x16) | AT93C76(x8) | AT93C76A | AT93C76B | AT93C76C | AT93C76D(x16) | AT93C76D(x8) | AT93C76E | BL93C76(x16) | BL93C76(x8) | BR93A76 | BR93C76 | BR93L76 | BR93LC76 | CAT93C76(x16) | CAT93C76(x8) | CAT93C76A | CAT93C76AH | CAT93C76B(x16) | CAT93C76B(x8) | CAT93C76H(x16) | CAT93C76H(x8) | CAT93C76R(x8) | CAT93HC76(x16) | CAT93HC76(x8) | CR93C76(x16) | CR93C76(x8) | EC93C76A(x16) | EC93C76A(x8) | EM93LC76(x16) | EM93LC76(x8) | FM93C76 | FM93C76A(x16) | FM93C76A(x8) | FT93C76(x16) | FT93C76(x8) | FT93C76A(x16) | FT93C76A(x8) | GSC93BC76A(x16) | GSC93BC76A(x8) | GT93C76(x16) | GT93C76(x8) | GT93C76A(x16) | GT93C76A(x8) | HT93LC76-A(x16) | HT93LC76-A(x8) | IN93AA76A | IN93AA76B | IN93AA76C(x16) | IN93AA76C(x8) | IN93LC76A | IN93LC76B | IN93LC76C(x16) | IN93LC76C(x8) | IS93C76-3 | IS93C76A(x16) | IS93C76A(x8) | IS93C76AGR(x16) | IS93C76AGR(x8) | IS93C76B | IS93C76BGR | IS93C76D(x16) | IS93C76D(x8) | IS93C76DGR(x16) | IS93C76DGR(x8) | K93C76 | KM93C76 | KM93C76GD | KM93C76V | KM93C76VGD | M93C76(x16) | M93C76(x8) | MC93C76 | MM93C76-3 | MM93C76-3GR | NM93C76 | NM93C76A | NM93C76A(x16) | NM93C76A(x8) | NM93C76L | NM93C76LZ | PTK93LC76(x16) | PTK93LC76(x8) | S-93A76A | S-93A76B | S-93L76AD | T93C76(x16) | T93C76(x8) | T93C76A(x16) | T93C76A(x8) | TMC93LC76 | TMC93LC76(x16) | TMC93LC76(x8) | W93C76 | W93C76B(x16) | W93C76B(x8) | XL93C76 | XL93LC76 | XL93LC76A | XL93LC76ARY | XL93LC76B(x16) | XL93LC76B(x8) | XL93LC76BRY(x16) | XL93LC76BRY(x8) | XL93LC76RY
93..86 **(16kbit)**	93AA86 | 93AA86A | 93AA86B | 93AA86C | 93C86 | 93C86A | 93C86B | 93C86C | 93CX86 | 93LC86 | 93LC86A | 93LC86B | 93LC86C | 93X86 | A93C86(x16) | A93C86(x8) | AF93BC86(x16) | AF93BC86(x8) | AK93C86 | AM93LC86 | AT93C86(x16) | AT93C86(x8) | AT93C86A | AT93C86B | AT93C86C | AT93C86D(x16) | AT93C86D(x8) | AT93C86E | BL93C86(x16) | BL93C86(x8) | BR93A86 | BR93C86 | BR93L86 | BR93LC86 | CAT93C86(x16) | CAT93C86(x8) | CAT93C86A | CAT93C86AH | CAT93C86B(x16) | CAT93C86B(x8) | CAT93C86H(x16) | CAT93C86H(x8) | CAT93C86R(x8) | CAT93HC86(x16) | CAT93HC86(x8) | CR93C86(x16) | CR93C86(x8) | EC93C86A(x16) | EC93C86A(x8) | EM93LC86(x16) | EM93LC86(x8) | FM93C86 | FM93C86A(x16) | FM93C86A(x8) | FT93C86(x16) | FT93C86(x8) | FT93C86A(x16) | FT93C86A(x8) | GSC93BC86A(x16) | GSC93BC86A(x8) | GT93C86(x16) | GT93C86(x8) | GT93C86A(x16) | GT93C86A(x8) | HT93LC86-A(x16) | HT93LC86-A(x8) | IN93AA86A | IN93AA86B | IN93AA86C(x16) | IN93AA86C(x8) | IN93LC86A | IN93LC86B | IN93LC86C(x16) | IN93LC86C(x8) | IS93C86-3 | IS93C86A(x16) | IS93C86A(x8) | IS93C86AGR(x16) | IS93C86AGR(x8) | IS93C86B | IS93C86BGR | IS93C86D(x16) | IS93C86D(x8) | IS93C86DGR(x16) |

| | IS93C86DGR(x8) \| K93C86 \| KM93C86 \| KM93C86GD \| KM93C86V \| KM93C86VGD \| M93C86(x16) \| M93C86(x8) \| MC93C86 \| MM93C86-3 \| MM93C86-3GR \| NM93C86 \| NM93C86A \| NM93C86A(x16) \| NM93C86A(x8) \| NM93C86L \| NM93C86LZ \| PTK93LC86(x16) \| PTK93LC86(x8) \| S-93A86A \| S-93A86B \| S-93L86AD \| T93C86(x16) \| T93C86(x8) \| T93C86A(x16) \| T93C86A(x8) \| TMC93LC86 \| TMC93LC86(x16) \| TMC93LC86(x8) \| W93C86 \| W93C86B(x16) \| W93C86B(x8) \| XL93C86 \| XL93LC86 \| XL93LC86A \| XL93LC86ARY \| XL93LC86B(x16) \| XL93LC86B(x8) \| XL93LC86BRY(x16) \| XL93LC86BRY(x8) \| XL93LC86RY |

93S46 **(1kbit)**	93S46 | M93S46 | NM93CS46
93S56 **(2kbit)**	93S56 | M93S56 | NM93CS56 | ST93CS56 | ST93CS57
93S66 **(4kbit)**	93S66 | M93S66 | NM93CS66

8.6. FLASH SPI 25… series

Supports low-voltage serial flash memories (1.5V, 1.8V, 2.5V) and standard (3.3V)

25..512 **(512kbit)**	A25L05P | A25L512 | A25L512A | A25LS512A | AC25LV512 | AT25DL5121 | AT25F512 | AT26DF5121 | EN25B05 | EN25F05 | EN25P05 | F25D512Q | F25L0512 | F25L05P | F25L05PA | F25L512P | F25L512Q | GD25Q512 | KH25L512 | M25P05 | M25P05-A | MS25X512 | MX25L512 | MX25L5121E | MX25L512C | MX25L512E | MX25V512 | MX25V5121E | MX25V512C | MX25V512E | PM25LV512 | PM25LV512A | SA25F005 | SST25VF512 | SST25VF512A | SST25WF512B | W25Q05CL | W25Q05CV | W25X05CL
25..010 **(1Mbit)**	A25L010 | A25L010A | A25L10P | AC25LV010 | AT24F1024 | AT25FS010 | EN24LF10 | EN25B10 | EN25F10 | EN25LF10 | EN25P10 | EN25S10 | ES25P10 | F25L01P | F25L01PA | GD25Q10 | KH25L1005 | M25P10 | M25P10-A | M25PE10 | MS25X10 | MX25L1005 | MX25L1005C | MX25L1005ZM | MX25L1006E | MX25L1021E | MX25L1025C | MX25L1026E | MX25U1001E | MX25V1006E | NX25P10 | PM25LV010 | PM25LV010A | S25FL001D | SA25F010 | SST25VF010 | SST25VF010A | SST25WF010 | TS25L010A | W25D10V | W25P10V | W25Q10BV | W25Q10CL | W25Q10CV | W25X10AV | W25X10BL | W25X10BV | W25X10CL | W25X10L | W25X10V
25..020 **(2Mbit)**	A25L020 | A25L020C | A25L20P | AT25DF021 | AT25F2048 | EN25B20 | EN25F20 | EN25LF20 | EN25P20 | EN25S20 | ES25P20 | F25D02P | F25D02QA | F25L02P | F25L02PA | GD25Q20B | GD25Q21B | KH25L2005 | M25P20 | M25PE20 | M25U2033E | MS25X20 | MX25L2005 | MX25L2005C | MX25L2005ZM | MX25L2006 | MX25L2025C | MX25L2026E | MX25L26C | MX25V2006E | NX25P20 | PM20LV020 | S25FL002D | SA25F020 | SST25VF020 | SST25VF020A | SST25VF020B | SST25WF020B | TS25L020A | W25D20V | W25P20V | W25Q20BW | W25Q20CL | W25Q20CV | W25X20BL | W25X20BV | W25X20CL
25..040 **(4Mbit)**	A25L040 | A25L040A | A25L40P | AT25DF041 | AT25F4096 | AT25FS040 | AT26F004 | EN25B40 | EN25F40 | EN25LF40 | EN25P40 | EN25Q40 | EN25S40 | EN25T40 | ES25M40 | ES25P40 | F25D04Q | F25D04QA | F25L004 | F25L04P | F25L04PA | GD25LQ40 | GD25Q40B | GD25Q41B | KH25L4005A | KH25L4006E | M25P40 | M25PE40 | MS25X40 | MX25L4005 | MX25L4005A | MX25L4005C | MX25L4006E | MX25L4025C | MX25L4026E | MX25U4033E | MX25U4035 | MX25V4005 | MX25V4005C | MX25V4006E | MX25V4035 | NX25P40 | PM25LV040 | S25FL004 | S25FL004A | S25FL004K | S25FL204K | SA25F040 | SST25VF040 | SST25VF040A |

	SST25VF040B | SST25WF040B | W25D40V | W25P40V | W25Q40BL | W25Q40BV | W25Q40BW | W25Q40CL | W25X40AL | W25X40AV | W25X40BL | W25X40BV | W25X40CL | W25X40L | W25X40V
25..080 **(8Mbit)**	A25L080 | A25L80P | AT25DF321 | AT25DL081 | AT26DF321 | EN25B80 | EN25D80 | EN25F80 | EN25P80 | EN25Q80 | EN25Q80A | EN25S80 | EN25T80 | ES25M80 | ES25P80 | F25D08QA | F25L08QA | FM25Q08 | FM25Q08A | GD25LQ80 | GD25Q80B | KH25L8005 | KH25L8006E | KH25L8036D | M25P80 | M25PE80 | M25PX80 | M25X80 | MS25X80 | MX25L8005 | MX25L8005ZM | MX25L8006E | MX25L8008E | MX25L8035E | MX25L8036E | MX25L8073E | MX25L8075E | MX25U8033E | MX25U8035 | MX25U8035E | MX25V8005 | MX25V8006E | NX25P80 | PM25LV080 | PM25LV080B | S25FL008A | S25FL008K | S25FL208K | SST25VF080B | SST25WF080B | TS25L80P | W25D80V | W25P80V | W25Q40CL | W25Q80BL | W25Q80BV | W25Q80BW | W25Q80DV | W25X80AL | W25X80AV | W25X80BV | W25X80L | W25X80V
25..016 **(16Mbit)**	A25L016 | A25L16P | A25LQ16 | AT25DF161 | AT25DL161 | AT26DF161 | EN25B16 | EN25D16 | EN25F16 | EN25P16 | EN25Q16A | EN25QA16 | EN25QH16 | EN25S16 | EN25T16 | ES25M16 | ES25P16 | F25L016 | F25L16P | F25L16PA | F25L16Q | F25L16QA | FM25Q16 | FM25Q16A | FM25Q16B | FM25S16A | GD25LQ16 | GD25Q16B | KH25L1605A | KH25L1605D | KH25L1606E | KH25L1635D | M25P16 | M25PE16 | M25PX16 | M25X16 | MS25X16 | MX25L1605 | MX25L1605A | MX25L1605D | MX25L1606E | MX25L1608D | MX25L1608E | MX25L1633E | MX25L1635D | MX25L1635E | MX25L1636D | MX25L1636E | MX25L1673E | MX25L1675E | MX25U1635E | N25Q016 | NX25P16 | PM25LV016 | PM25LV016B | QB25F016S33B | QH25F016S33B | S25FL016 | S25FL016A | S25FL016K | S25FL116K | S25FL216K | SA25F160 | SST25VF016B | TS25L16AP | TS25L16BP | TS25L16P | W25Q16BV | W25Q16CL | W25Q16CV | W25Q16DV | W25Q16DW | W25X16AL | W25X16AV | W25X16BV | W25X16V
25..032 **(32Mbit)**	A25L032 | A25LQ32A | AT25DF321 | AT26SD321 | EN25B32 | EN25F32 | EN25P32 | EN25Q32B | EN25QA32 | EN25QH32 | EN25S32 | ES25P32 | F25L32P | F25L32PA | F25L32Q | F25L32QA | FM25Q32 | FM25Q32A | GD25LQ32 | GD25LQ32C | GD25Q32B | GD25Q32C | KH25L3205D | KH25L3206E | M25P32 | M25PE32 | M25PX32 | M25X32 | MX25L3205A | MX25L3205D | MX25L3206E | MX25L3208D | MX25L3208E | MX25L3225D | MX25L3235D | MX25L3235E | MX25L3236D | MX25L3237D | MX25L3239E | MX25L3273E | MX25L3275E | MX25U3235E | MX25U3235F | N25Q032 | NX25P32 | QB25F320S33B | QH25F320S33B | S25FL032 | S25FL032A | S25FL032K | S25FL032P | S25FL132K | SA25F320 | SST25VF032B | W25Q32BV | W25Q32DW | W25Q32FV | W25Q32V | W25X32AV | W25X32BV | W25X32V
25..064 **(64Mbit)**	A25LMQ64 | A25LQ64 | EN25F64 | EN25Q64 | EN25QA64 | EN25QH64 | EN25S64 | F25D64QA | F25L64QA | FM25Q64 | FM25Q64A | GD25LQ64B | GD25LQ64C | GD25Q64B | GD25Q64C | KH25L6405D | KH25L6406E | M25P64 | M25PX64 | MX25L6405 | MX25L6405D | MX25L6406E | MX25L6408D | MX25L6408E | MX25L6433F | MX25L6435E | MX25L6436E | MX25L6439E | MX25L6445E | MX25L6465E | MX25L6473E | MX25L6475E | MX25U6435E | MX25U6435F | MX25U6473F | N25Q064 | N25Q064A11 | N25Q064A13 | QB25F640S33B | QH25F640S33B | S25FL064A | S25FL064K | S25FL064P | S25FL164K | SST25VF064C | W25Q64CV | W25Q64DW | W25Q64FV | W25Q64FW | W25X64BV | W25X64V
25..128 **(128Mbit)**	EN25Q128 | EN25QA128 | EN25QH128 | EN25QH128A | F25D128QA | F25L128QA | GD25LQ128 | GD25LQ128C | GD25Q128B | GD25Q128C | KH25L12845E | M25P128 | MX25L12805D | MX25L12835E | MX25L12835F | MX25L12836E | MX25L12839F | MX25L12845E | MX25L12865E | MX25L12873F | MX25L12875F | MX25U12835F | N25Q128 | N25Q128A11 | N25Q128A13 | S25FL127S | S25FL128K | S25FL128P | S25FL128S | S25FL129P | S25FS128S | W25Q128BV | W25Q128FV | W25Q128FW
25..256 **(256Mbit)**	EN25QA256 | EN25QH256 | EN25QH256A | EN25S256 | MX25L25635E | MX25L25635F | MX25L25639F | MX25L25645G | MX25L25655E | MX25L25655F | MX25L25735E | MX25L25735F | MX25L25835E | MX25L25855E | MX25U25635F | N25Q256A11 | N25Q256A13 | N25Q256A33 | N25Q256A73 | N25Q256A81 | N25Q256A83 | S25FL256L | S25FL256P | S25FL256S | S25FS256S | W25Q256FV | W25Q256JV | W25Q257FV

8.7. FLASH SPI 45… series

45.. (1 - 64MBit)	AT45DB011, AT45DB021, AT45DB041, AT45DB081, AT45DB161, AT45DB321, AT45DB642

8.8. FRAM I2C 24… series

24..04	FM24V01
24..16	FM24V02 | FM24W256
24..64	FM24C04B | FM24CL04B
24..01	FM24V05
24..02	FM24V10 | FM24VN10
24..05	FM24C16B | FM24CL16B
24..10	FM24C64B | FM24CL64B

8.9. FRAM SPI 25… series

25..04	FM25V01
25..16	FM25V02 | FM25W256
25..64	FM25040B | FM25L04B
25..01	FM25V05
25..02	FM25V10 | FM25VN10
25..05	FM25C160B | FM25L16B
25..10	FM25H20 | FM25V20
25..20	FM25640B | FM25CL64B

8.10. Optical and ethernet modules (SFP/SFP+ transceivers)

Please note that there is SFP adapter required with external power supply!

SFP / SFP+ **(MSA standard:** **0xA0, 0xA2)**	SFP and SFP+, read/write block 0xA0 (256B), read block 0xA2 (256B), standard MSA Supports not secured chips - example manufacturers: GBC, HUAWEI, GPON, JDSU, MIKROTIK, OPTEC, OPTION, WTD and other OEM Possibility to change manufacturers info, model, serial number etc. and recalculate checksum directly from REVELPROG-IS application.

8.11. Your suggestions

If you have any suggestion for supported device list please contact us at lab@reveltronics.com. There is possibility to add any serial device with I2C, SPI or uWire interface (EEPROM/FLASH/FRAM).

9. APPENDIX B - video tutorials and technical support

Programming examples on youtube:

https://www.youtube.com/playlist?list=PLKdrjJPMLd8KBX12vHdyCg_0JfNT0Aw7U

REVELTRONICS' forum:

http://www.reveltronics.com/forum/viewforum.php?f=10